

**REMARKS**

**Status of the Claims**

Claims 56-57, 60, and 62-64 are amended, and claims 61 and 66 are canceled without prejudice or disclaimer. Claim 69 is new, which finds support in the specification at page 6, line 21-26. No new matter has been added.

**Response to Examiner Telephone Interview**

During the telephone interview of February 10, 2004, the examiner indicated that the “hybridization” language recited in claim 48 does not meet the PTO’s standard for “hybridization language.” In relevant part, claim 48 recites “a nucleotide sequence which hybridizes to the *SBE II-D1* gene having the nucleotide sequence shown in SEQ ID NO: 10.”

While not apparent in the Advisory Action or any prior Office Actions, the examiner indicated that the recitation of a genus encompassing “a nucleotide sequence which hybridizes to SEQ ID NO: X” requires several specific examples of nucleotide sequences that so hybridize. Furthermore, the examiner suggested applicants submit a Rule 132 Declaration advancing additional sequences that hybridize to the *SBE II-D1* gene.

As indicated in the Amendment filed November 3, 2003, the as-filed application provides at least two examples of nucleotide sequences, coding for SBE II activity, that hybridize to the *SBE II-D1* gene.

For example, Example 13 details isolation of a *SBE II* gene, represented by clone SBE-9, that encodes the amino acid sequence of SEQ ID NO:12. See Specification, page 36. A cDNA clone having about 97% sequence identity with the coding region of SEQ ID NO:10, SBE-9 was shown to have SBE activity by Rahman *et al.* (2001), where the clone is designated cDNA1. A copy of Rahman *et al.* (2001) is enclosed for consideration (previously submitted).

In a second example, Example 14 states “sequencing of the *SBE II* gene contained in clone 2, termed *SBE II-D1* (see SEQ ID NO: 10), showed that it coded for the N-terminal sequence of the major isoform of SBE II expressed in the wheat endosperm, as identified by

Morell *et al.* (1997). This is shown in Figure 13.” See Specification, page 37. A copy of Morell *et al.* (1997) is enclosed for consideration (previously submitted).

In addition to the specification’s examples of nucleotide sequences that hybridize to the *SBE II-D1* gene, Declarant Sadequr Rahman indicates that his laboratory has isolated additional wheat nucleotide sequences, coding for starch branching-enzyme activity, that hybridize to the *SBE II-D1* gene. See Exhibit A: Declaration of Dr. Sadequr Rahman, executed March 12, 2004. Specifically, Declarant Rahman attests that his laboratory has identified ten wheat cDNA sequences, all of which encode SBE II activity and hybridize to the *SBE II-D1* gene under stringency conditions similar to those detailed in Examples 13-14 of the specification. See Exhibit A.

Based on the examples in the as-filed specification and the data advanced in Exhibit A, a person knowledgeable in plant molecular biology would have understood that the present invention provides several specific nucleotide sequences, all of which hybridize to the *SBE II-D1* gene and encode starch branching enzyme activity.

#### **Response to Restriction**

In the Office Action of July 2, 2003, the examiner has withdrawn claims 55, 57-58, 63-65, and 67-68 on the basis that “the claims are drawn to an invention not elected in the response to the restriction requirement filed 7/22/2002. See 37 CFR 1.142(b) and MPEP 821.03.” See Office Action, page 2, item 2. Applicants respectfully traverse this restriction requirement.

The present invention was filed under 35 U.S.C. § 371, and therefore, this application should be evaluated under the standard of unity of invention. Applicants respectfully direct the examiner’s attention to PCT Rule 13.1 MPEP, Annex B, paragraph (c), wherein it states:

“unity of invention has to be considered in the first place only in relation to the independent claims in an international application and not the dependent claims.”

Furthermore, “if the independent claims avoid the prior art and satisfy the requirement of unity of invention, no problem of lack of unity arises in respect of any claims that depend

on the independent claims. In particular, it does not matter if the dependent claim itself contains a further invention.” See MPEP, Annex B, paragraph c(i).

Applying the rules for unity of invention, applicants submit that the present restriction is improper. Specifically, claims 55 and 63, and 67-68 (and their respective dependent claims 57-58 and 64-65) depend from elected independent claims, and therefore should be elected under the provisions of PCT Rule 13.1. Accordingly, applicants respectfully request withdrawal of the restriction requirement.

### **Information Disclosure Statement**

In the Final Office Action of July 2, 2003, the examiner indicated that applicants have not submitted Australian Patent No. 48747/97. The examiner acknowledges receipt of Australian Patent No. 730900. See Final Office Action, page 3, item 7.

Applicants respectfully submit that Australian Patent Application No. 48747/97 is the application number for granted Australian Patent No. 730900. These documents are essentially the same, only the number has changed. In accordance with Australian practices, applications are given a number (*e.g.* 48747/97) at the time of filing and a serial number (*e.g.* 730900) upon acceptance.

### **Rejections- 35 U.S.C. § 112, Second Paragraph**

Claims 56, 60-61, and 66 are rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness. See Final Office Action of July 2, 2003, page 3-4, item 8. As there are numerous indefinite rejections, each rejection is enumerated below.

Claim 56 has been rejected on the grounds that “the term altering is unclear.” Similarly, claim 66 has been rejected on the basis that “the term altered is unclear.” Applicants respectfully traverse these rejections on the basis that a claim is sufficiently definite to satisfy the statutory requirement of 35 U.S.C. § 112, second paragraph, if one of ordinary skill in the art would understand the bounds of the claim when read in light of the specification. Miles Labs., Inc. v. Shandon, Inc., 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993). Most importantly here, a claim is definite if it is amenable to construction,

however confusing that task may be. Exxon, 265 F.3d at 1375, 60 USPQ2d at 1276. In other words, if the meaning of the claim is discernible, the claim avoids a rejection on indefiniteness grounds. Id.

In this rejection, claims 56 and 66 are amenable to claim construction, since the meaning of “altering” and “altered” are available from dictionaries. Since the meaning of claims 56 and 66 are discernible, claims 56 and 66 avoid rejection on indefiniteness grounds. Thus, the rejections should be withdrawn.

Claim 60 has been rejected on the grounds that “propagating material” is allegedly indefinite. The present version of claim 60 avoids this issue. Accordingly, applicants respectfully request reconsideration and withdrawal of the rejection.

**Rejections- 35 U.S.C. § 101**

In the Advisory Action of December 17, 2003, the examiner indicates “The 101 rejection would be overcome, if the amendment was entered.” See Advisory Action, page 2. Applicants respectfully request the examiner to enter the remarks made of record in the Amendment filed November 3, 2003.

**Rejections- 35 U.S.C. § 112, first paragraph (written description)**

Claims 48-50, 52-54, 56, 59-62, and 66 are rejected under 35 U.S.C. 112, first paragraph, for alleged lack of written description. The examiner bases this rejection on the grounds that “applicants have not fully described the genus which would include for example, those amino acids involved in the catalytic domain(s) of the enzyme.” See Final Office Action, pages 5-6, item 11.

Applicants respectfully traverse this rejection. According to MPEP § 2163, the examiner has the initial burden of presenting evidence why a person skilled in the art would not recognize in an applicant’s disclosure a description of the invention defined by the claims. As the examiner even admits, applicants have disclosed “structural features of the wheat endosperm SBE II gene, including the promoter.” See Final Office Action, page 6. Yet the

rejection is maintained on the grounds that applicants have not, for example, provided the amino acids involved in the catalytic domain(s).

According to the U.S. Patent and Trademark Office Guidelines for Written Description, the examiner must consider identifying characteristics of an inventive nucleotide or amino acid sequence, such as disclosure of partial structure, functional characteristics, known or disclosed correlation between structure and function, and physical and/or chemical properties. Disclosure of any of these characteristics, or combination thereof, sufficiently meet the requirements for written description. See Guidelines for Written Description, page 8. At a minimum, applicants have disclosed a partial sequence, functional characteristics, and correlations between structure and function. Accordingly, the rejection is improper and should be withdrawn.

Claims 48-50, 52-54, 56, 59-62, and 66 are rejected under 35 U.S.C. 112, first paragraph, for alleged lack of written description. Specifically, the claims are rejected on the grounds that "SBE II gene comprises 22 exons which are encoded by genomic sequence base numbers 1058 to 11475, but applicants only disclose 11463 bases in SEQ ID NO: 10." See Final Office Action, pages 5-6, item 11.

Applicants have amended the specification to reflect the correct length of SEQ ID NO: 10. Therefore, applicants disclose the full genomic sequence and are in possession of the claimed invention. Accordingly, the rejection is improper and should be withdrawn.

**Rejections- 35 U.S.C. § 112, first paragraph (enablement)**

Claims 48-54, 56, 59-62, and 66 are rejected under 35 U.S.C. § 112, first paragraph, for alleged lack of enablement. Final Office Action, pages 6-7. Applicants respectfully traverse this rejection.

For the reasons advanced above, and as supplemented by the Declaration of Dr. Rahman executed on October 31, 2003, the claimed subject matter is supported by an enabling disclosure. See Exhibit B: Declaration of Dr. Sadequr Rahman, executed October 31, 2003 (previously submitted). Specifically, the translation product encoded by SEQ ID

NO: 10 was identified based on its having SBE II activity and has several structural and functional domains characteristic of SBE II proteins. See Exhibit B.

Furthermore, Dr. Rahman corroborates that plants transformed with SEQ ID NO: 10 in the antisense orientation have reduced SBE II enzyme expression and altered starch content. See Exhibit B. According to Dr. Rahman, the isolated nucleic acids of the invention may be used according to the teaching of the specification to alter SBE II activity and starch in a plant. See Exhibit B.

Therefore, the specification provides full disclosure to guide a person skilled in the art to make and use the present invention. For this reason, applicants respectfully request reconsideration and withdrawal of the rejection.

### CONCLUSION

If there are any questions concerning this application, the examiner is courteously invited to contact the undersigned counsel.

Respectfully submitted,

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By



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